

DOCKET NO: 146493US6

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
EMMANUEL COLIN, ET AL. : EXAMINER: FERGUSON, LAWRENCE D
SERIAL NO: 09/498,363 :
FILED: FEBRUARY 4, 2000 : GROUP ART UNIT: 1774
FOR: LAMINATED GLAZING WITH :
HIGH CRASH TEST RESISTANCE

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313
SIR:

I. REAL PARTY IN INTEREST

The real party in interest is Saint Gobain Vitrage of Courbevoie, France.

II. RELATED APPEALS AND INTERFERENCES

The appeal filed on June 11, 2002, which is now moot.

III. STATUS OF CLAIMS

Claims 1-7, 10 and 12-19 are pending and are finally rejected. Claims 8 and 9 have been cancelled and Claim 11 has been objected to as depending from a rejected claim.

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

It is known that a laminated glazing can comprise first and second sheets, in which the first sheet is offset in relation to the second sheet to form an exposed edge portion of the first sheet. This is shown in U.S. patent 5,132,162 to DePaoli and presents a peripheral thinning of the glazing, which allows it to be installed flush in a body contoured for flush installation of a monolithic sheet of glass, but results in inferior crash test resistance when the vehicle strikes an obstacle under standardized conditions (page 2, lines 5-12).

According to a feature of the invention, the strength of the glazing is enhanced by extending the intercalated adhesive layer binding the second sheet to the first sheet such that the intercalated adhesive layer extends over a portion of at least the exposed edge portion of the first sheet, and by at least partially covering the intercalated adhesive layer at the exposed edge with an intermediate element. The cement element that secures the glazing to the body is then at least partially adhered to the intermediate element. For example, as illustrated in the non-limiting embodiment of the figures, the intermediate element 4 covers the exposed portion of the intercalated adhesive layer 3, and the cement element 6 which secures the glazing to the body is at least partially adhered to the intermediate element 4. This permits reinforcing the connection of the glazing to the frame, in particular in shock situations (page 3, lines 4-5).

Mapping Claim 1 to the specification and drawings:

Laminated glazing to be fitted upon a body [5], comprising:

a transparent first sheet [1];

a transparent second sheet [2], wherein the first sheet [1] is offset in relation to the second sheet [2] to form an exposed edge portion of the first sheet [page 6, lines 14-15];

an intercalated adhesive layer [3] binding said second sheet to said first sheet [page 6, lines 15-16], wherein the intercalated adhesive layer extends over a portion of at least the exposed edge portion of the first sheet [page 6, line 16];

an intermediate element [4] at least partially covering the intercalated adhesive layer at said exposed edge [page 6, lines 17-18]; and

a cement element [6] adhered at least partly to said intermediate element [4] for securing the glazing to a body.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-7, 10 and 12-19 stand rejected under 35 U.S.C. § 103 as being obvious over DePaoli in view of U.S. patent 5,137,770 to Rothe et al.

VII. ARGUMENT

A. Claim 1

Claim 1 recites an intercalated adhesive layer extending over at least a portion of an exposed edge portion of a transparent sheet, which exposed edge is provided by an offset, together with an intermediate element at least partially covering the intercalated layer at the exposed edge, and a cement element at least partially adhered to the intermediate element. This is not taught by DePaoli in view of Rothe et al.

DePaoli discloses a glazing useful for aircraft windows, wherein rigid glass sheets 18 and 19 are connected by interlayers 24-26. All of the layers 24-26 have essentially the same dimensions, and so there is no offset or “exposed edge portion” between these layers. The

glass sheet 17 is adhered to the glass sheet 18 by interlayer 20 composed of layers 22 and 23, and has a smaller dimension than the glass sheet 18, thereby forming an exposed edge portion of the glass sheet 18.

DePaoli thus discloses a laminated glazing possessing an exposed edge portion. However, the similarities between DePaoli and the claimed invention here end. DePaoli lacks any disclosure of the interlayer 20 binding the sheets 17 and 18 extending over at least a portion of the exposed edge portion. Rather, Figure 4 of DePaoli clearly shows that the interlayer 20 does not extend onto the exposed edge portion. In the same way, DePaoli lacks the claimed intermediate element at least partially covering the (non-existent) intercalated adhesive layer at the exposed edge portion. Presumably, a cement element may be used to adhere the laminated glazing of DePaoli to a vehicle body, but there is no disclosure that such a cement element would cover the (non-existent) intermediate element.

The Examiner has evidently recognized the shortcoming of DePaoli that it lacks an interlayer and intermediate element extending onto the exposed edge portion, but considers that this would have been obvious as an “adjustment” involving only routine skill in the art. That is, it is evidently the Examiner’s position that one of the individual layers 22, 23 of the interlayer 20 of DePaoli is an intercalated adhesive layer and the other is an intermediate element at least partially covering the adhesive layer. However, extending the interlayer 20 of DePaoli to cover at least a portion of the exposed edge is not an “adjustment” but is a modification which would not have been obvious to one skilled in the art. As the name “interlayer” implies, the interlayer 20 is provided between two glass sheets to adhere the sheets to one another. One skilled in the art would not have extended the interlayer 20 to cover at least a portion of the exposed edge of the sheet 18 – a location that is not between two glass sheets and where adhesion is not required – without an expectation of some further benefit.

Moreover, simply characterizing such a modification as an “adjustment” does not provide a motivation for extending the interlayer 20 of DePaoli beyond the location where it is required for adhesion of the glass sheets. The Examiner has relied on *In re Stevens* to support the obviousness of “adjustability,” however it is noted that *In re Stevens* deals with adjustable hand and finger grips in a fishing rod where adjustability “has long been recognized as desirable for the reason that some fishermen like to see what particular angle best suits their own hands and their method of casting.” This case involves a teaching in the art of the desirability of adjustability; it does not suggest that it would have been obvious to have extended an adhesive layer in DePaoli beyond where adhesiveness is required.

Significantly, extending the interlayer 20 of DePaoli onto the exposed surface of the glass sheet 18 is not merely “the predictable use of prior art elements according to their established functions” (*KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007)) since such an extension of the interlayer is not required for adhesion of glass sheets. Moreover, there would have been no motivation for one skilled in the art to have made such a modification, even by taking into “account of the inferences and creative steps that a person of ordinary skill in the art would employ” (*Id.*) because the interlayer 20 would have served no purpose on a surface that was not located between two glass sheets.

Thus the Examiner’s statement that the difference between DePaoli and the claims is that DePaoli “does not teach that a cement can be adhered to the intermediate element for securing the glazing to the body” or the material of the intermediate element understates the shortcomings of DePaoli. More fundamentally, DePaoli lacks any teaching of an intercalated adhesive layer extending over at least a portion of an exposed edge portion of a transparent sheet, which exposed edge is provided by an offset, together with an intermediate element at least partially covering the intercalated layer at the exposed edge.

The Examiner has relied upon Rothe et al to teach “the benefit of adding cement to a laminated glazing having glass panes for improvement of water tightness,” and that it would have been “obvious to use the intermediate elements in Rothe et al in place of those used by DePaoli.” However, this modification would not have been obvious to one skilled in the art.

Rothe et al discloses the attachment of a glazing to a frame 7 and, in particular, seeks to eliminate poor adhesion of a cement profile in a flush glazing (column 2, lines 57-63).

Rothe et al describes that durable adhesive connections between glass bodies and other materials must withstand great mechanical stresses in the event of impact. The glass bodies can include laminated glass panes (column 1, line 17). A glass body is shown at 1 and has a peripheral edge covering 3 or 4 made of ceramic or a primer. A further layer of primer 5 is placed over the primer layer 4, and cement profiles 2 are placed on the primer 5. Profiles of a second moldable cement 6 are applied between the profiles 2 and on the primer 5 for adhering the glazing 1 to the frame 7.

However Rothe et al does not disclose first and second transparent sheets, in which the first sheet is offset in relation to the second sheet to form an exposed edge portion of the first sheet, the intermediate element being at the exposed edge, nor has the Examiner alleged that Rothe et al discloses an intermediate element at such an exposed edge. *There is no offset whatsoever in the single sheet glazing of Rothe et al.*

Thus the Examiner has merely relied upon Rothe et al to teach adding cement to the offset structure present in DePaoli. Specifically, the Examiner has alleged that it would have been obvious “to use the intermediate elements of Rothe et al in place of those used by DePaoli.” But as has already been described, DePaoli lacks a description of an intermediate element at least partially covering an intercalated adhesive layer at an exposed edge. Rothe et al also lacks an intermediate element at least partially covering an intercalated adhesive layer at an exposed edge; neither of the elements 4 and 5 mounted on the glass body 1 in

Rothe et al at least partially covers an intercalated adhesive layer which binds the sheets of the glazing, and so Rothe et al cannot supply any of these necessary teachings which are missing from DePaoli.

In summary, DePaoli teaches only a laminated glazing possessing an exposed edge portion. It does not teach an intercalated adhesive layer extending at least partially over this exposed edge portion. Nor does it teach an intermediate element at least partially covering the intercalated adhesive layer at the exposed edge, or a cement element which is at least partially adhered to the intermediate element at least partially covering an intercalated adhesive layer at an exposed edge. Rothe et al similarly does not supply the missing teachings of DePaoli. The “intermediate elements” 4 and 5 of this reference do not at least partially cover an intercalated adhesive layer at an exposed edge provided by an offset between first and second sheets of the glazing, and the cement elements of this reference do not at least partially adhere to the (non-existent) intermediate element at least partially covering an intercalated adhesive layer. Thus they cannot suggest an intercalated adhesive layer or an intermediate element at an exposed edge provided by an offset between first and second sheets of the glazing in DePaoli. The claims therefore clearly define over any combination of these references.

B. Claim 3

Claim 3 further recites that the intermediate element does not penetrate under the second sheet. Since the Examiner considers that one of the interlayer elements 22, 23 of DePaoli is the intermediate element, it inherently penetrates under the second sheet.

C. Claims 5-7

Dependent Claims 5-7 recite the tensile strength of the intermediate element. Each of these claims recites a high tensile strength of the intermediate element which is inconsistent with one of the adhesive interlayer elements 22, 23 of DePaoli. Therefore it would not have been obvious to modify the adhesive interlayer elements 22, 23 of DePaoli to have the claimed tensile strength.

D. Claim 14

Dependent Claim 14 recites that the intermediate element is formed of either aluminum or stainless steel. These materials are not adhesive and are not inconsistent with the purpose of the adhesive interlayer elements 22, 23 of DePaoli, and so it would not have been obvious to have used one of these materials for the adhesive interlayer elements 22, 23 of DePaoli.

The Examiner considers that Rothe et al teaches the use of aluminum or stainless steel intermediate elements at lines 1-6 of column 11. However, not only does aluminum or stainless steel make no sense for an adhesive interlayer, but this portion of column 11 of Rothe et al merely describes that the “other material” can be any metal or metal alloy. The “other material” is defined at lines 1-2 of column 11 as being the element to which the glass body is cemented by the cement (“the glass body according to the invention can be cemented to a wide variety of other materials”). Thus, the noted portion of column 11 merely describes that the glass body can be cemented to a steel or aluminum vehicle body. In no case does Rothe et al teach the presence of an “intermediate element” conforming to the claims and being formed of aluminum or stainless steel.

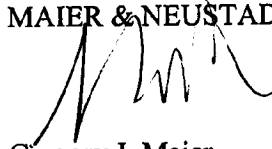
E. Claims 15-16

Claims 15 and 16 recite that the intermediate element contains reinforcement fillers such as glass fibers and organic fibers. Rothe et al provides no teaching for an intermediate element formed of a resin containing reinforcing fillers such as glass fibers and organic fibers and so cannot teach this feature in DePaoli.

Appellants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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APPENDIX OF APPEALED CLAIMS

1. Laminated glazing to be fitted upon a body, comprising:
 - a transparent first sheet;
 - a transparent second sheet, wherein the first sheet is offset in relation to the second sheet to form an exposed edge portion of the first sheet;
 - an intercalated adhesive layer binding said second sheet to said first sheet, wherein the intercalated adhesive layer extends over a portion of at least the exposed edge portion of the first sheet;
 - an intermediate element at least partially covering the intercalated adhesive layer at said exposed edge; and
 - a cement element adhered at least partly to said intermediate element for securing the glazing to a body.
2. Laminated glazing according to claim 1, wherein the intercalated adhesive layer covering said exposed edge is totally covered by the intermediate element.
3. Laminated glazing according to claim 1, wherein the intermediate element does not penetrate under the second sheet.
4. Laminated glazing according to claim 1, wherein the intermediate element penetrates under the second sheet.
5. Laminated glazing according to claim 1, wherein the intermediate element is formed of a material having a tensile strength in conformity with the standard ISO 527.

6. Laminated glazing according to claim 1, wherein the intermediate element is formed of a material having a tensile strength at least equal to 10,000 MPa.
7. Laminated glazing according to claim 1, wherein the intermediate element is formed of a material having a tensile strength at least equal to 15,000 MPa.
10. Laminated glazing according to claim 1, wherein the porosity of the material constituting the intermediate element corresponds to a water recovery at least equal to 30 g/day/m² for a 3 mm thick intermediate element.
12. Laminated glazing according to claim 1, wherein the cement element is adhered to both the intermediate element and the first sheet.
13. Laminated glazing according to claim 1, wherein the cement element is adhered to only the intermediate element.
14. Laminated glazing according to claim 1, wherein the intermediate element is formed from at least one material from the group consisting of aluminum and stainless steel.
15. Laminated glazing according to claim 1, wherein the intermediate element is formed from at least one material from the group consisting of an epoxy and a phenolic, unsaturated polyester resin containing reinforcement fillers.

16. Laminated glazing according to claim 15, wherein the reinforcement fillers are comprised of at least one material from the group consisting of glass fibers and organic fibers.

17. Laminated glazing according to claim 15, wherein the reinforcement fillers are comprised of at least one material from the group consisting of fibers of carbon and aromatic polyamide.

18. Laminated glazing according to claim 10, wherein the intermediate element is formed of an electrical insulator.

19. Laminated glazing according to claim 1, wherein the body is an automobile body.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

Appeal filed on June 11, 2002, and now moot.